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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )  
Yoshiyuki AKIYAMA et al. ) Group Art Unit: 1791  
Application No.: 10/757,413 )  
Filed: January 15, 2004 ) Examiner: Jill Lynne HEITBRINK  
For: WAVEFORM MONITORING ) Confirmation No.: 3372  
APPARATUS AND METHOD FOR )  
MONITORING WAVEFORM )

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Sir:

**REPLY BRIEF UNDER 37 C.F.R. § 41.41**

Pursuant to 37 CFR § 41.41, Appellants present this Reply Brief in response to  
the Examiner's Answer mailed on May 29, 2009.

## I. Response to Examiner's Arguments in the Answer

In addition to the reasoning supporting reversal of the outstanding final rejection provided in Appellants' Appeal Brief filed on February 17, 2009, Appellants provide the following remarks specifically directed to the Examiner's Answer ("Answer") mailed on May 29, 2009.

The Examiner notes that "claim 12 is a method claim which clearly should be dependent from method claim 7 . . . [and because] the dependent claims are not separately argued, the patentability of dependent method claim 12 should rise and fall with method claim 7." Answer, p. 16, lines 16-20. Appellants agree with Examiner's statement regarding dependent claim 12. Upon indication of allowance of claim 7, Appellants will amend claim 12 to properly depend on claim 7.

### Ground A: Rejection over Moriwaki '244 in view of Sekido

#### 1. Apparatus claim 1 and dependent claims 3, 5, 6, and 13

##### (a) The Marking Applier

As discussed in Appellants' Appeal Brief, the Final Office Action ("FOA") does not actually assert that Moriwaki '244 teaches or suggests the claimed marking applier. See Appeal Brief, p. 6, lines 8-9. In the Answer, the Examiner asserts that "waveform generator and malfunction signal [disclosed in Moriwaki '244] would have been considered a marking applier since the signal is determined from the calculated waveform and would have signaled a portion of the result waveform being in excess of the predetermined range of the reference pressure waveform." Answer, p. 17, lines 7-10. Appellants submit that even assuming the "malfunction signal" could have signaled

a portion of the result waveform being in excess of the predetermined range of the reference pressure waveform, as asserted by the Examiner, the “malfunction signal” still does not meet the claimed “marking,” because the “malfunction signal” is not applied to “an excess portion of the measured value waveform,” and is not “thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as required by claim 1 (emphasis added).

The Examiner admits that “in Moriwaki ‘244, this marking [i.e., the malfunction signal,] is not taught as being a thicker portion of the waveform.” Answer, p. 17, lines 10-11. Consistent with the Examiner’s admission, Moriwaki ‘244 does not teach or suggest the claimed “marking [that] is thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as recited in claim 1. Accordingly, Moriwaki ‘244 does not teach or suggest the claimed “marking applier, applying a marking to an excess portion of the measured value waveform . . . wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as recited in claim 1.

Also as discussed in Appellants’ Appeal Brief, the FOA does not actually assert that Sekido teaches or suggests the claimed “marking applier.” See Appeal Brief, p. 7, lines 4-6. In the Answer, the Examiner refers to Sekido’s figures 1a, 1b, and 1c, which show the displaying of the measured injection pressure waveform compared to the upper and lower limit values, and contends that “[t]he line of this result waveform line outside of the limit waveform is a marking.” Answer, p. 17, lines 12-22. Appellants respectfully submit that the “result waveform line outside of the limit waveform” disclosed in figures 1b and 1c of Sekido does not meet the claimed “marking,” as

recited in claim 1. Claim 1 recites that the “marking” is applied to “an excess portion of the measured value waveform,” and is “thicker than other portions of the measured value waveform that do not exceed the reference pressure” (emphasis added). In contrast, Sekido’s “result waveform line outside of the limit waveform” is part of the result waveform, and in particular, is an excess portion of the result waveform. If assuming *arguendo* that the “result waveform line outside of the limit waveform” is the claimed “marking,” as alleged by the Examiner (and a notion to which Appellants do not accede), then consistent with the requirement set forth in claim 1, the “result waveform line outside of the limit waveform” of Sekido would be applied to an excess portion of the result waveform line that exceeds the limit waveform, which is the “result waveform line outside of the limit waveform” itself. However, Sekido does not teach or suggest that the “result waveform line outside of the limit waveform” is applied to itself. Furthermore, Sekido does not teach or suggest that the “result waveform line outside of the limit waveform” is “thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as recited in claim 1 (emphasis added). Therefore, Sekido’s “result waveform line outside of the limit waveform” does not meet the “marking” recited in claim 1. Accordingly, Sekido does not teach or suggest the claimed “marking applier.”

As presented above, Moriwaki ‘244 clearly does not teach or suggest the claimed “marking [which] is thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as essentially admitted by the Examiner in the Answer. See Answer, p. 17, lines 10-11. Appellants note that in the Answer, the

Examiner also does not assert that and does not adequately explain how Sekido allegedly cures the above deficiency of Moriwaki '244.

The Examiner also asserts that “[t]he processing unit of Sekido which sends signals to the display to show the waveforms as shown in Figs. 1a, 1b, 1c of Sekido teaches a marking applier since the signals are sent to a display.” Answer, p. 18, lines 6-8. Appellants disagree. The “marking applier” recited in claim 1 applies “a marking to an excess portion of the measured value waveform . . . wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure” (emphasis added). Even assuming that Sekido’s processing unit does send signals to a display, Sekido does not teach or suggest that the processing unit applies “a marking to an excess portion of the measured value waveform . . . wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as recited in claim 1 (emphasis added).

Therefore, for at least the above reasons and the reasons presented in section VII.A.1.(a) of the Appeal Brief, Appellants submit that neither Moriwaki '244 nor Sekido teach or suggest the claimed “marking” and “marking applier” recited in claim 1. Accordingly, the Examiner has not established a *prima facie* case of obviousness.

(b) The Thicker Marking

The Examiner continues to allege that the thicker marking of claim 1 is non-functional descriptive material and constitutes printed matter, citing to nonprecedential *Ex Parte Mathias*, 84 USPQ2d 1276, for additional support. See Answer, p. 18, lines 12-14. Appellants submit that the situation of *Ex Parte Mathias* is not analogous with the situation of the present application. In *Ex Parte Mathias*, the claim at issue is

directed to “[a]n on-screen icon for viewing the score of a broadcast sporting event . . . comprising: an on-screen, scoreboard style insert displayed over the broadcasted image of the sporting event . . .” *Ex Parte Mathias*, 84 USPQ2d 1276, 1277. Thus, the claim at issue in *Ex Parte Mathias* is purely related to displaying information. In contrast, claim 1 of the present application is directed to “a waveform monitoring apparatus” including a combination of “a hydraulic cylinder,” “a sensor,” “a determinant,” “a marking applier, applying a marking to an excess portion of the measured value waveform,” and “a display,” wherein the marking “is thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as recited in claim 1. Therefore, *Ex Parte Mathias* is inappropriate. Instead, as discussed in section VII.A.1.(b) of the Appeal Brief, *In re Miller*, 164 USPQ 46, is more applicable to the present application.

The Examiner continues to allege that the thicker marking of claim 1 constitutes printed matter and is non-functional descriptive material. Answer, p. 18, line 10 to p. 19, line 21. Appellants reassert and incorporate by reference the arguments discussed in section VII.A.1.(b) of the Appeal Brief.

The Examiner contends that “[t]he marking on the displayed waveform being a thicker line only has meaning to the observation of the display and not to the operation of the injection molding device.” Answer, p. 18, lines 16-18. First, Appellants submit that the thicker marking not only has the meaning to observation of the display, but also has meaning to the operation of the waveform monitoring apparatus, as discussed at p. 10, line 7 to p. 11, line 4 of the section VII.A.1.(b) of the Appeal Brief. Second, the thicker marking additionally has meaning to the operation of the injection molding

device. Because the waveform monitoring apparatus has meaning to the operation of the injection molding device, and because there is a new and unobvious functional relationship between the thicker marking and the waveform monitoring apparatus and its components, the thicker marking also has meaning to the operation of the injection molding device.

The Examiner contends that prior art discloses displaying the measured waveform with an upper and a lower limit waveform, and "a person viewing the waveform display would be able to determine that the line is outside of the limits with or without the portion having a thicker marking and thus the function of the line has not changed." Answer, p. 19, line 3-10. Appellants note that claim 1 does not recite displaying the upper and lower limits, but rather, recites displaying a marking applied to an excess portion of the measured waveform, the marking being thicker than other portions of the measured waveform that do not exceed the reference pressure. Indeed, displaying the measured waveform with the upper and lower limit waveforms may function as an indication of malfunction by showing a portion of the measured waveform outside of the upper and lower limit waveforms, as disclosed in the cited prior art. However, the method disclosed in the cited prior art is just one way of monitoring the measured waveform. The present application discloses another new and nonobvious way for monitoring the measured waveform by using the thicker marking applied to an excess portion of the measured waveform. In fact, displaying the thicker marking along the excess portion of the measured waveform can be carried out without displaying the upper and lower limit waveforms, as illustrated in Fig. 2 of the present application.

Appellants submit that the method disclosed in the cited prior art does not render the apparatus claims of the present application obvious.

The Examiner also contends that “[a]s to an apparatus that may generate a waveform and provide indications on the display, this apparatus is broadly disclosed as the process section 13 in the specification wherein no new apparatus is disclosed to perform the functional relationship between the waveform and the ‘marking.’” Answer, p. 19, lines 10-14. Appellants disagree with the Examiner’s allegations. Even assuming that the apparatus for generating a waveform and providing indications on the display is the process section 13, the mere fact that the cited prior art may have disclosed a general process section does not preclude the patentability of the process section 13 of the present application, which includes “a marking applier, applying a marking to an excess portion of the measured value waveform . . . wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as recited in claim 1, at least because the cited prior art does not teach or suggest such a claimed “marking applier.” Therefore, the process section 13 is new apparatus configured to perform the functional relationship between the waveform and the “marking.”

In response to Appellants’ arguments that the thicker marking is functionally related to the waveform monitoring apparatus because it provides information about the properties of the measured waveform, the Examiner contends that “[h]owever, Appellants’ specification on page 14, lines 6-12 recognizes that the measured waveform may be displayed in a different color, or may be a warning lamp or buzzer. The prior art recognizes the relationship of the measured waveform and the upper and lower limits,

and its use to determine the quality and operation of the injection molding machine."

Answer, p. 19, lines 15-21. Appellants submit that neither Appellants' disclosure at page 14, lines 6-12 of specification, nor the prior art's recognition precludes that the thicker marking, as recited in claim 1, is functionally related to the waveform monitoring apparatus.

Finally, to the extent it may be determined that the thicker marking does constitute "printed matter" (a notion to which Appellants do not accede), Appellants note that *In re Miller* states that "[t]he fact that printed matter *by itself* is not patentable subject matter, because nonstatutory, is no reason for ignoring it when claim is directed to combination." *In re Miller*, 164 USPQ 46, 49. Claim 1 is directed to a waveform monitoring apparatus including a combination of a hydraulic cylinder, a sensor, a determinant, a marking applier, and a display. In addition, claim 1 has also properly defined the new and functional relationship between the thicker marking and the waveform monitoring apparatus and its components, as discussed in the section VII.A.1.(b) of the Appeal Brief. Therefore, even if the board concludes that the thicker marking may properly be characterized as printed matter, there is a new and functional relationship between the thicker marking and the waveform monitoring apparatus and its components recited in claim 1.

(c) The Display

The Examiner contends that Sekido shows displaying of the measured injection pressure waveform compared to the upper and lower limit values, the excess portion of the measured waveform being shown beyond the upper and lower limit values. See Answer, p. 20, lines 3-5. The Examiner also contends that although "this excess portion

is not shown as a thicker marking . . . the waveform line being thicker in the excess portion only relates to the appearance of the display and does not change the function of the injection molding machine or the monitoring of the pressure." Answer, p. 20, lines 5-8.

Appellants submit that the Examiner has erred in interpreting the claimed "marking" as the "excess portion of the measured waveform" disclosed in Sekido. For reasons set forth above in section Ground A.1.(a), the "excess portion of the measured waveform" disclosed in Sekido does not meet the claimed "marking" recited in claim 1. Therefore, Moriwaki and Sekido do not teach, suggest, or otherwise render obvious the claimed "display for displaying the measured value waveform having the excess portion to which the marking is applied," as recited in claim 1. Furthermore, for reasons set forth in section Ground A.1.(b), the thicker marking does change the operation and the function of the injection molding machine or the monitoring of the pressure.

2. Method claim 7 and dependent claims 9-12 and 14

(a) Applying the Marking

The Examiner contends that "Moriwaki '244 describes a malfunction signal being output which is clearly similar to the marking being a warning lamp or buzzer (Appellants' specification page 14, lines 11 and 12)." Answer, p. 20, lines 14-16. Appellants respectfully submit that the Examiner has erred in characterizing the claimed "marking" being "a warning lamp or buzzer" disclosed in Appellants' specification. Appellants' specification states that "[a] warning lamp may turn on or a buzzer may sound when an error takes place." Specification, p. 14, lines 11-12. The specification does not state that the "warning lamp or buzzer" are embodiments of the claimed

“marking.” In fact, the “warning lamp or buzzer” does not meet the requirement as set forth in claim 7 for the “marking,” at least because the “warning lamp or buzzer” is not “thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as required by claim 7 (emphasis added). Therefore, even assuming the “malfunction signal” of Moriwaki ‘244 is similar to the “warning lamp or buzzer,” the “malfunction signal” does not meet the claimed “marking,” at least because the “malfunction signal” is not “thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as required by claim 7 (emphasis added).

The Examiner also contends that Sekido “clearly shows the displaying of the measured injection pressure waveform compared to the upper and lower limit values. These waveforms with a portion of the line outside the upper and lower limit values are markings, but the portion is not a thicker line. The waveform outlying the limit values is marking the excess portion of the measured value waveform.” Answer, p. 20, lines 17-21. For at least reasons similar to those set forth in section Ground A.1.(a), Sekido’s “waveforms with a portion of the line outside the upper and lower limit values” are not markings, at least because the “waveforms with a portion of the line outside the upper and lower limit values” do not meet the requirement of being “thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as required by claim 7 (emphasis added). Even assuming that “[t]he waveform outlying the limit values is marking the excess portion of the measured value waveform,” as alleged by the Examiner (Answer, p. 20, lines 20-21), the “waveform outlying the limit values” is not the claimed “marking” for the reasons presented above. Therefore, Sekido does not

teach or suggest “applying a marking to an excess portion of the measured value waveform . . . wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as recited in claim 7, and does not cure the deficiencies of Moriwaki ‘244.

(b) Applying a Thicker Marking

The Examiner contends that “the marking being thicker than other portion[s] of the measured value waveform would have been considered printed matter since the prior art teaches the waveform line shown outside of the upper and lower limits which would provide the same function of indicating product defects.” Answer, p. 21, lines 2-5. Appellants respectfully submit that the proposition that the prior art may have taught the “the waveform line shown outside of the upper and lower limits which would provide the same function of indicating product defects,” does not support the Examiner’s allegation that the claimed thicker marking is “printed matter.”

In response to Appellants’ arguments that the thicker marking is entitled to patentable weight because there exists a new and unobvious functional relationship between the thicker marking and the waveform monitoring apparatus and its components, the Examiner contends that “[t]he functional relationship between the thicker marking and the waveform monitor does not change the function of the injection molding machine, only the appearance of the line in the display.” Answer, p. 21, lines 8-10. Appellants submit that the waveform monitoring apparatus is configured to monitor the measured waveform of the injection molding machine. The result of the monitoring by the waveform monitoring apparatus affects the operation of the injection molding machine. As described in Appellants’ specification, the injection molding machine may

be shut down based on the result of monitoring the measured waveform. Since the functional relationship between the thicker marking and the waveform monitoring apparatus is related to the monitoring of the measured waveform, this functional relationship indeed may change the operation and function of the injection molding machine.

(c) Displaying the Excess Portion with the Marking

The Examiner contends that “[t]he excess portion is shown beyond the upper and lower limit values in Sekido, but this excess portion is not shown as a thicker marking.” Answer, p. 21, lines 15-17. For at least reasons similar to those presented in section Ground A.1.(a), the “excess portion” of Sekido does not meet the claimed “marking,” much less the thicker marking.

The Examiner also contends that “[t]he waveform line being thicker in the excess portion only relates to the appearance of the display and does not change the function of the injection molding machine or the monitoring of the pressure.” Answer, p. 21, lines 17-19. For reasons similar to those set forth above in sections Ground A.1.(b) and Ground A.2.(b), displaying the thicker marking does change the operation and function of the injection molding device and the monitoring of the pressure.

Ground B: Rejection over Morikawa '009

1. Apparatus claim 1 and dependent claims 3, 5, 6, and 13

(a) The Marking Applier

The Examiner contends that “when the monitored value waveform is outside of the permissible range, this waveform is a marking to an excess portion of the measured

value waveform." Answer, p. 22, lines 4-6. For reasons similar to those set forth above in section Ground A.1.(a), the "waveform [] outside of the permissible range" disclosed in Morikawa does not meet the claimed "marking."

The Examiner also contends that "[a]dditionally, an alarm is a type of marking such as a warning lamp or buzzer which are known error indicators, see Appellants' specification page 14, lines 6-12." Answer, p. 22, lines 8-10. For reasons similar to those set forth above in section Ground A.2.(a), the "warning lamp" and "buzzer" disclosed in Appellant's specification are not embodiments of the claimed "marking." For similar reasons, the "alarm" disclosed in Morikawa does not meet the claimed "marking."

The Examiner also contends that "[t]hese waveforms [disclosed in Morikawa] with a portion of the line outside the upper and lower limit values are markings, but the portion is not a thicker line. The waveform outlying the limits is marking the excess portion of the measured value waveform." Answer, p. 22, lines 10-12. For reasons similar to those set forth above in sections Ground A.1.(a) and Ground A.2.(b), the "waveform outlying the limits" disclosed in Morikawa does not meet the claimed "marking."

(b) The Thicker Marking

Appellants reassert and incorporate by reference the arguments set forth in section VII.A.1.(b) of the Appeal Brief, and those set forth above in section Ground A.1.(b) of this Reply Brief.

(c) The Display

The Examiner also contends that “[t]he waveform line being thicker in the excess portion only relates to the appearance of the display and does not change the function of the injection molding machine or the monitoring of the pressure.” Answer, p. 23, lines 1-3. For reasons similar to those set forth above in sections Ground A.1.(a) and Ground A.1.(c), the “excess portion” disclosed in Morikawa does not meet the claimed “marking.” For reasons similar to those set forth above in sections Ground A.1.(b) and Ground A.2.(b), the thicker marking does change the operation and function of the injection molding device and the monitoring of the pressure.

2. Method claim 7 and dependent claims 9-12 and 14

(a) Applying The Marking

Appellants reassert and incorporate by reference the arguments set forth above in section Ground B.1.(a).

(b) Applying a Thicker Marking

Appellants reassert and incorporate by reference the arguments set forth in sections VII.A.1.(b) of the Appeal Brief, and those set forth above in sections Ground A.1.(b) and Ground A.2.(b) of this Reply Brief.

(c) Displaying the Excess Portion with the Marking

Appellants reassert and incorporate by reference the arguments set forth above in section Ground B.1.(c).

Ground C: Rejection over Neko

1. Apparatus claim 1 and dependent claims 3, 5, 6, and 13

(a) The Marking Applier

The Examiner contends that Neko's "value ER . . . is a marking as to the excess portion of the measured value waveform that exceeds the reference pressure." Answer, p. 24, lines 15-17. Appellants submit that Neko's value ER does not meet the claimed "marking," at least because the value ER is not "thicker" than other portions of the measured value waveform that do not exceed the reference pressure," as required by claim 1. Therefore, Neko does not teach or suggest the claimed "marking" or the claimed "marking applier."

(b) The Thicker Marking

Appellants reassert and incorporate by reference the arguments set forth in sections VII.A.1.(b) of the Appeal Brief, and those set forth above in section Ground A.1.(b) of this Reply Brief.

(c) The Display

The Examiner contends that "Neko discloses a CRT to display the results and Fig. 4 shows a graph of the reference pressure, the allowable range and a broken line showing the actual resin pressure." Answer, p. 25, lines 6-8. Appellants submit that because Neko does not teach or suggest the claimed "marking," Neko does not teach or suggest the claimed display "for displaying the measured value waveform having the excess portion to which the marking is applied," as recited in claim 1.

The Examiner also contends that "[t]he display showing a marking applied to the excess portion of the measured value waveform would have been descriptive material

wherein the information of the number of errors and the display of the waveform of Neko shows the descriptive material in a different arrangement." Answer, p. 25, lines 8-12.

Appellants submit that for reasons set forth above in section Ground A.1.(b), the claimed "marking" is not descriptive material, and is entitled to patentable weight.

2. Method claim 7 and dependent claims 9-12 and 14

(a) Applying The Marking

The Examiner contends that Neko describes "the determination of an error when the excess waveform portion occurs and counts number of occurrence of the excess portion or error and outputs a defective signal which is similar to the marking being a warning lamp or buzzer (Appellants' specification page 14, lines 11 and 12)." Answer, p. 25, lines 18-21. For reasons set forth in section Ground A.2.(a), the "warning lamp or buzzer" is not an embodiment of the claimed "marking." Similarly, the "defective signal" disclosed in Neko does not meet the claimed "marking," at least because the "defective signal" is not "thicker than other portions of the measured value waveform that do not exceed the reference pressure," as recited in claim 7 (emphasis added).

The Examiner also contends that "[t]hese waveforms [disclosed in Neko] with a portion of the line outside the upper and lower limit values are markings." Answer, p. 26, lines 1-2. Appellants submit that at least for reasons similar to those set forth in sections Ground A.1.(a) and Ground A.2.(a), the "waveforms with a portion of the line outside the upper and lower limit values" disclosed in Neko do not meet the claimed "marking[s]."

(b) Applying a Thicker Marking

Appellants reassert and incorporate by reference the arguments set forth in sections VII.A.1.(b) of the Appeal Brief, and those set forth above in sections Ground A.1.(b) and Ground A.2.(b) of this Reply Brief.

(c) Displaying the Excess Portion with the Marking

The Examiner contends that “[t]he measured value[] outside of these upper and lower limits is a marking of the excess portion.” Answer, p. 26, lines 11-12. For reasons similar to those presented in section Ground A.1.(a), the “measured value[] outside of these upper and lower limits” disclosed in Neko does not meet the claimed “marking.” For example, the “measured value[] outside of these upper and lower limits” is not applied “to an excess portion of the measured value waveform,” and is not thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as recited in claim 7 (emphasis added). Therefore, Neko does not teach or suggest “displaying the measured value waveform having the excess portion to which the marking is applied . . . wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as recited in claim 7.

Ground D: Rejection over Moriwaki '254 taken together with Neko

1. Apparatus claim 1 and dependent claims 3, 5, 6, and 13

(a) The Marking Applier

The Examiner contends that “in Moriwaki, the outlying observation has been determined, stored and is used to indicate an abnormality.” Answer, p. 26, lines 20-21.

For reasons similar to those set forth above in section Ground A.1.(a), the outlying observation disclosed in Moriwaki '254 does not meet the claimed "marking," at least because the "outlying observation" is not applied to "an excess portion of the measured value waveform," and is not "thicker than other portions of the measured value waveform that do not exceed the reference pressure," as required by claim 1 (emphasis added). Therefore, Moriwaki '254 does not teach or suggest the claimed "marking applier."

The Examiner also contends that with respect to Neko, "Appellants are similarly counting the number of times an error signal is successively indicated in the calculation performed in the process section 13, . . . and [t]hese error signals are markings . . ." Answer, p. 27, lines 7-10. Appellants do not agree with the Examiner's above characterizations and allegations. Although Neko teaches counting numbers of occurrence of the excess portion or error and outputting a defective signal (see the Examiner's statement in the Answer at p. 25, lines 18-20), Neko's defective signal is not "thicker than other portions of the measured value waveform that do not exceed the reference pressure," as recited in claim 1 (emphasis added). Therefore, Neko does not teach or suggest the claimed "marking," or the claimed "marking appliers," and does not cure the deficiencies of Moriwaki '254.

(b) The Thicker Marking

Appellants reassert and incorporate by reference the arguments set forth in sections VII.A.1.(b) of the Appeal Brief, and those set forth above in section Ground A.1.(b) of this Reply Brief.

(c) The Display

The Examiner contends that “[t]hese waveforms [discloses in Moriwaki ‘254] with a portion of the line outside the upper and lower limit values are markings, but the portion is not a thicker line. The waveform outlying the limit values is marking the excess portion of the measured value waveform.” Answer, p. 27, line 21 to p. 28, line 2. For reasons similar to those set forth above in sections Ground A.1.(a) and Ground A.2.(a), the “waveforms with a portion of the line outside the upper and lower limit values” disclosed in Moriwaki ‘254 are not claimed “marking[s],” at least because the “waveforms with a portion of the line outside the upper and lower limit values” do not meet the requirement of being “thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as required by claim 1 (emphasis added). Even assuming that “[t]he waveform outlying the limit values is marking the excess portion of the measured value waveform,” as alleged by the Examiner (Answer, p. 28, line 1-2), the “waveform outlying the limit values” is still not the claimed “marking” because it does not meet the requirement set forth in claim 1. Therefore, Moriwaki ‘254 does not teach or suggest the claimed “display for displaying the measured value waveform having the excess portion to which the marking is applied, wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure,” as recited in claim 1.

2. Method claim 7 and dependent claims 9-12 and 14

(a) Applying The Marking

Appellants reassert and incorporate by reference the arguments set forth in sections VII.D.1.(a) of the Appeal Brief, and those set forth above in sections Ground A.1.(a) and Ground D.1.(a) of this Reply Brief.

(b) Applying a Thicker Marking

Appellants reassert and incorporate by reference the arguments set forth in sections VII.A.1.(b) of the Appeal Brief, and those set forth above in sections Ground A.1.(b) and Ground A.2.(b) of this Reply Brief.

(c) Displaying the Excess Portion with the Marking

The Examiner contends that “[i]f the results waveform is outside of the permissible range, then the display would show the excess portion beyond the upper and lower limit values in Moriwaki.” Answer, p. 28, lines 16-18. Appellants submit that for reasons similar to those set forth above in section Ground A.1.(a), although the display of the results waveform in Moriwaki ‘254 may indicate the excess portion beyond the upper and lower limit values, the excess portion of the results waveform does not meet the claimed “marking.” Therefore Moriwaki ‘254 does not teach or suggest the claimed “marking.”

The Examiner also contends that “[t]he waveform line being thicker in the excess portion only relates to the appearance of the display and does not change the function of the injection molding machine or the monitoring of the pressure.” Answer, p. 28, lines 18-20. Appellants submit that for reasons similar to those set forth above in sections Ground A.1.(b) and Ground A.1.(c), the display of the thicker marking does change the

operation and function of the injection molding machine or the monitoring of the pressure.

Ground E: Rejection over Moriwaki '244 in view of Sekido, taken together with Inden in view of Colorblind

1. Apparatus claim 1 and dependent claims 3, 5, 6, and 13

(a) The Marking Applier

The Examiner contends that "in Moriwaki '244 the waveform generator and malfunction signal would have been considered a marking applier." Answer, p. 29, lines 8-10. Appellants submit that for reasons similar to those set forth above in section Ground A.1.(a), the "malfunction signal" is not the claimed "marking."

The Examiner also contends that Sekido's "Figs. 1a, 1b, and 1c [show] the displaying of the measured injection pressure waveform compared to the upper and lower limit values . . . [and the] line of this result waveform line outside of the limit waveform is a marking." Answer, p. 29, line 13 to p. 30, line 1. Appellants submit for reasons similar to those set forth above in section Ground A.1.(a), the "line of this result waveform line outside of the limit waveform" does not meet the claimed "marking."

The Examiner also contends that "[t]he waveform line being thicker in the excess portion only relates to the appearance of the display and does not change the function of the injection molding machine or the monitoring of the pressure." Answer, p. 30, lines 1-4. For reasons similar to those set forth above in sections Ground A.1.(b) and Ground A.1.(c), displaying the thicker marking does change the operation and function of the injection molding machine or the monitoring of the pressure.

The Examiner also contends that "Inden (col. 5, lines 31-43) teaches the 'abnormal information adding section (56) detects whether the measured data is . . . abnormal, that is outside the upper value or the lower value, and displays the occurrence of abnormal information to give an alarm . . . . The abnormal information condition is displayed, as shown in FIG. 9, by displaying a red line at the left side . . . [and] a variation in the method, such as changing a color of the line of the trend format or changing the line into a dotted line, may be considered.'" Answer, p. 30, lines 11-19. For reasons set forth above in section VII.E.1.(b) of the Appeal Brief, neither changing the color of the line nor changing the line into a dotted line teaches or suggests "applying a marking to an excess portion of the measured value waveform . . . wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure," as recited in claim 1 (emphasis added). Even though Inden may teach or suggest producing a "red line marking of the abnormal condition" (Answer, p. 30, line 20), the "red line marking" disclosed in Inden does not meet the claimed "marking," at least because the "red line marking" is not "thicker than other portions of the measured value waveform that do not exceed the reference pressure," as required by claim 1 (emphasis added).

(b) The Thicker Marking

The Examiner asserts that "changing of the line into a dotted line does change the thickness of the line by removing a portion of the line to form the dotted line." Answer, p. 31, lines 2-4. Appellants respectfully disagree with the Examiner's assertion. Appellants submit that "removing a portion of the line" does not result in a marking that

"is thicker than other portions of the measured value waveform that do not exceed the reference pressure," as recited in claim 1 (emphasis added).

The Examiner also contends that "adjusting of the shape and color of a graph line[] would have been obvious to a person of ordinary skill in the art so as to provide the desired view and clarity." Answer, p. 31, lines 6-8. This is no more than a conclusion unsupported by the facts. Neither Moriwaki '244 nor Sekido discloses the claimed "marking," which is applied "to an excess portion of the measured value waveform." Even if Moriwaki '244 and Sekido are combined with Inden and Colorblind, the combination does not render claim 1 obvious at least because Inden and Colorblind also do not teach or suggest the claimed "marking."

The Examiner also contends that "Inden, col. 5, lines 40-43 . . . is changing the color of the trend format or changing the line into a dotted line." Answer, p. 31, lines 17-19. Appellants submit that even assuming the Examiner's characterization of Inden is correct, Inden does not teach or suggest the claimed "marking," which is applied "to an excess portion of the measured value waveform," and "is thicker than other portions of the measured value waveform that do not exceed the reference pressure," as recited in claim 1 (emphasis added).

## 2. Method claim 7 and dependent claims 9-12 and 14

### (a) Applying the Marking and Displaying the Marking

The Examiner contends that "in Moriwaki '244 the waveform generator and malfunction signal would have been considered as applying a marking." Answer, p. 32, lines 8-12. For reasons set forth above in section Ground A.1.(a), the "waveform

generator and malfunction signal" disclosed in Moriwaki '244 do not teach or suggest "applying a marking to an excess portion of the measured value waveform . . . wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure," as recited in claim 7.

The Examiner also contends that in Sekido's Figs. 1a, 1b, and 1c, "[t]he line of this result waveform line outside of the limit waveform is a marking." Answer, p. 32, lines 21-22. For reasons set forth above in section Ground A.1.(a), the "line of [the] result waveform line outside of the limit waveform" does not meet the claimed "marking."

The Examiner also contends that "[t]he waveform line being thicker in the excess portion only relates to the appearance of the display and does not change the function of the injection molding machine or the monitoring of the pressure." Answer, p. 32, line 22 to p. 33, line 2. For reasons set forth above in section Ground A.1.(b), displaying the thicker marking does change the operation and function of the injection molding machine or the monitoring of the pressure.

The Examiner asserts that "Appellants[] have not disclosed in the specification any new calculation or processing for determining and displaying the waveform and marking, page 9, line 3 thru page 10, line 10 of the specification." Appellants do not accede to the Examiner's assertion for reasons set forth in the Appeal Brief and this Reply Brief.

(b) Applying a Thicker Marking

The Examiner asserts that "the changing of the line into a dotted line does change the thickness of the line by removing a portion of the line to form the dotted line." Answer, p. 33. Appellants disagree with the Examiner's assertion. Appellants

submit that removing a portion of a line does not result in a marking that "is thicker than other portions of the measured value waveform that do not exceed the reference pressure," as recited in claim 7 (emphasis added).

The Examiner also contends that "Inden, col. 5, lines 40-43 . . . is changing the color of the trend format or changing the line into a dotted line." Answer, p. 33, line 21 to p. 34, line 1. Appellants submit that even assuming the Examiner's characterization of Inden is correct, Inden does not teach or suggest "applying a marking to an excess portion of the measured value waveform . . . wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure," as recited in claim 7 (emphasis added).

Ground F: Rejection over Morikawa '009 taken together with Inden in view of Colorblind

1. Apparatus claim 1 and dependent claims 3, 5, 6, and 13

(a) The Marking Applier and the Display

Appellants reassert and incorporate by reference the arguments set forth in sections VII.B.1.(a) and (c) of the Appeal Brief.

(b) The Thicker Marking

Appellants reassert and incorporate by reference the arguments set forth in section VII.E.1.(b) of the Appeal Brief.

2. Method claim 7 and dependent claims 9-12 and 14

(a) Applying the Marking and Displaying the Marking

Appellants reassert and incorporate by reference the arguments set forth in sections VII.B.1.(a) and (c) of the Appeal Brief, and sections Ground B.1.(a) and (c) and Ground B.2.(a) and (c) of this Reply Brief.

(b) Applying a Thicker Marking

Appellants reassert and incorporate by reference the arguments set forth in section VII.E.1.(b) of the Appeal Brief, and sections Ground E.1.(b) and Ground E.2.(b) of this Reply Brief.

Ground G: Rejection over Neko taken together with Inden in view of Colorblind

1. Apparatus claim 1 and dependent claims 3, 5, 6, and 13

(a) The Marking Applier and the Display

Appellants reassert and incorporate by reference the arguments set forth in sections VII.C.1.(a) and (c) of the Appeal Brief, and sections Ground C.1.(a) and (c) of this Reply Brief.

(b) The Thicker Marking

Appellants reassert and incorporate by reference the arguments set forth in section VII.E.1.(b) of the Appeal Brief, and section Ground E.1.(b) of this Reply Brief.

2. Method claim 7 and dependent claims 9-12 and 14

(a) Applying the Marking and Displaying the Marking

Appellants reassert and incorporate by reference the arguments set forth in sections VII.C.1.(a) and (c) of the Appeal Brief, and sections Ground C.1.(a) and (c) and Ground C.2.(a) and (c) of this Reply Brief.

(b) Applying a Thicker Marking

Appellants reassert and incorporate by reference the arguments set forth in section VII.E.1.(b) of the Appeal Brief, and sections Ground E.1.(b) and Ground E.2.(b) of this Reply Brief.

Ground H: Rejection over Moriwaki '254 taken together with Neko in view of Inden and Colorblind

1. Apparatus claim 1 and dependent claims 3, 5, 6, and 13

(a) The Marking Applier and the Display

Appellants reassert and incorporate by reference the arguments set forth in sections VII.D.1.(a) and (c) of the Appeal Brief, and sections Ground D.1.(a) and (c) of this Reply Brief.

(b) The Thicker Marking

Appellants reassert and incorporate by reference the arguments set forth in section VII.E.1.(b) of the Appeal Brief, and section Ground E.1.(b) of this Reply Brief.

2. Method claim 7 and dependent claims 9-12 and 14

(a) Applying the Marking and Displaying the Marking

Appellants reassert and incorporate by reference the arguments set forth in sections VII.D.1.(a) and (c) of the Appeal Brief, and sections Ground D.1.(a) and (c) and Ground D.2.(a) and (c) of this Reply Brief.

(b) Applying a Thicker Marking

Appellants reassert and incorporate by reference the arguments set forth in section VII.E.1.(b) of the Appeal Brief, and sections Ground E.1.(b) and Ground E.2.(b) of this Reply Brief.

**II. Conclusion**

For the reasons given above, and those reasons provided in Appellants' Appeal Brief, Appellants respectfully submit that the rejections of the claims are in error and should be reversed.

If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, please charge such fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
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Dated: July 23, 2009

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